

IN THE CLAIMS

Claim 1 (currently amended): An amplifier circuit for providing drive signals to a load, comprising:

an input for receiving data signals;

a first circuit operable with a first supply rail coupled with said input and having components operated at a first voltage and said first circuit adapted for providing a current signal indicative of said data signals; and

a second circuit operable with a second supply rail coupled with said first circuit and having components operated at a second voltage for providing a drive signal to said load, wherein said first circuit and said second circuit are cooperable for providing a class AB drive current to said load.

Claim 2 (original): The amplifier of Claim 1, wherein said second circuit further including a mirror circuit for mirroring said current signal provided by said first circuit at a predetermined mirror ratio for providing said drive current.

Claim 3 (original): The amplifier of Claim 2, wherein said predetermined mirror ratio is fifty to one.

Claim 4 (original): The amplifier of Claim 1, wherein said second voltage is approximately 4-5 times that of said first voltage.

Claim 5 (currently amended): An amplifier circuit for providing drive signals to a load, comprising:

an input for receiving data signals;

a first circuit coupled with said input and having components operated at a first voltage and said first circuit adapted for providing a current signal indicative of said data signals; and

a second circuit coupled with said first circuit and having components operated at a second voltage for providing a drive signal to said load, wherein said first circuit and said second circuit are cooperable for providing a class AB drive current to said load.

~~The amplifier of Claim 1,~~ wherein said first circuit comprises transistors operable from a supply rail providing approximately five volts and said second circuit comprises transistors operable from a supply rail providing a voltage in range of 22 volts to 25 volts.

Claim 6 (original): The amplifier of Claim 1, wherein said drive signal has a current of approximately 250 micro amperes in the steady state condition.

Claim 7 (original): The amplifier of Claim 1, wherein said second circuit includes a first branch for receiving from said first circuit a source/sink current indicative of said data signals and a second branch for outputting said drive signal to said load, wherein said drive signal current is a predetermined ratio of said source/sink current.

Claim 8 (original): The amplifier of Claim 1, wherein said input is a differential input for receiving a digital-to-analog converted data signal and a reference signal.

Claim 9 (original): The amplifier of Claim 1, wherein said input, said first circuit, and said second circuit are integrated on a semiconductor chip.

Claim 10 (currently amended): An amplifier circuit for providing drive signals to a piezo element provided for positioning a head in a mass data storage device, comprising:

an input for receiving data signals indicative of head positioning;

a first circuit operable with a first supply rail coupled with said input and having components operated at a first voltage and said first circuit adapted for providing a current signal indicative of said data signals; and

a second circuit operable with a second supply rail coupled with said first circuit and having components operated at a second voltage for providing a drive signal to said piezo element, wherein said first circuit and said second circuit are cooperable for providing a class AB drive current to said piezo element.

Claim 11 (original): The amplifier of Claim 10, wherein said second circuit further including a mirror circuit for mirroring said current signal provided by said first circuit at a predetermined mirror ratio for providing said drive current.

Claim 12 (original): The amplifier of Claim 11, wherein said predetermined mirror ratio is fifty to one.

Claim 13 (original): The amplifier of Claim 10, wherein said second voltage is approximately 4-5 times that of said first voltage.

Claim 14 (original): The amplifier of Claim 10, wherein said first circuit comprises transistors operable from a supply rail providing approximately five volts and said second circuit comprises transistors operable from a supply rail providing a voltage in range of 22 volts to 25 volts.

Claim 15 (currently amended): An amplifier circuit for providing drive signals to a piezo element provided for positioning a head in a mass data storage device, comprising:

an input for receiving data signals indicative of head positioning;

a first circuit coupled with said input and having components operated at a first voltage and said first circuit adapted for providing a current signal indicative of said data signals; and

a second circuit coupled with said first circuit and having components operated at a second voltage for providing a drive signal to said piezo element, wherein said first circuit and said second circuit are cooperable for providing a class AB drive current to said piezo element,

~~The amplifier of Claim 10,~~ wherein said drive signal has a current of approximately 250 micro amperes in the steady state condition.

Claim 16 (original): The amplifier of Claim 10, wherein said second circuit includes a first branch for receiving from said first circuit a source/sink current indicative of said data signals and a second branch for outputting said drive signal to said piezo element, wherein said drive signal current is a predetermined ratio of said source/sink current.

Claim 17 (original): The amplifier of Claim 10, wherein said input is a differential input for receiving a digital-to-analog converted data signal and a reference signal.

Claim 18 (original): The amplifier of Claim 10, wherein said input, said first circuit, and said second circuit are integrated on a semiconductor chip.

Claim 19 (original): An amplifier on a semiconductor chip for providing a drive signal indicative of a data input signal to a capacitive load, said amplifier comprising:

an input for receiving said data input signal;

a first transistor circuit operable with a first supply rail coupled to said input and adapted for converting said data input signal to a corresponding current signal, said first transistor circuit is further couplable to a first supply rail for receiving a first voltage for operating transistors therein;

a second transistor circuit operable with a second supply rail coupled to said first transistor circuit for receiving said current signal and adapted to amplify the magnitude thereof, said second transistor circuit is further couplable to a second supply rail for receiving a second voltage for operating transistors therein; wherein

said first transistor circuit and said second transistor circuit are integrated for providing a class AB operable current; and

an output coupled to said second transistor circuit for outputting said class AB operable current to said capacitive load.

Claim 20 (original): The amplifier of Claim 19, wherein said first voltage is in a range of approximately five volts and said second voltage is in a range of approximately 24 volts.